AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) Method for adjusting microstructural properties of a metal produced in ~~the process control or process regulation of~~ an installation for ~~the~~ shaping, cooling, and/or heat treatment of the metal, ~~especially steel or aluminum,~~ wherein the installation is equipped with actuators for setting specific operating parameters, and the corresponding method process is based on a method model, with which suitable process control and/or process regulation variables for acting on the actuators are determined online with computer assistance after relevant measured values have been detected, comprising the steps of: detecting ~~wherein~~ at least one current actual microstructural characteristic value that provides information about the metal microstructure ~~is detected~~ online at an ~~the~~ end of or during a ~~the~~ corresponding method process as a ~~the~~ relevant measured value;[[,]] and ~~that~~, depending on the relevant ~~this~~ value and using ~~with the use of~~ a microstructure model and the method model on which the process is based, exerting an effect ~~is exerted~~ on

the actuators of the method process in order to adjust desired microstructural properties of the metal, such that the following can be nondestructively detected as the actual microstructural characteristic value:

- a microstructural grain size value, ~~preferably by means of ultrasonic or x-ray measuring instruments~~ and/or
- a microstructural transformation time or the microstructural transformation time interval, ~~for example, by detection of the linear expansion of the metallic lattice that is associated with the transformation by means of measuring instruments that contact the metal, such as rolling force measuring devices or measuring rollers~~ and/or
- the microstructural transformation temperature~~, for example, by means of one or more temperature detection units, which can be moved longitudinally with respect to the direction of metal conveyance and are positioned as a function of the site of the microstructrual transformation that is expected on the basis of the microstructure model~~.

2. (Currently Amended) Method in accordance with Claim 1, wherein ~~the~~ austenitic grain size is determined as the

microstructural grain size value for the steel group of a C-Mn steel.

3. (Currently Amended) Method in accordance with Claim 1, including detecting ~~wherein several detection units are used to detect~~ the site or the time interval of the beginning and end of the microstructural transformation with several detection units.

4. (Currently Amended) Method in accordance with Claim 1, including carrying out ~~wherein~~ online microstructural control ~~is carried~~ out in a cooling line of a wire mill with a water-cooled segment of the cooling line and an air-cooled segment of the cooling line, detecting ~~wherein~~ a current microstructural grain size value of the metal wire ~~is detected~~ after passage through the water-cooled segment of the cooling line by means of an ultrasonic measuring instrument, and detecting ~~wherein~~ the temperature of a microstructural transformation and a ~~the~~ course of the microstructural transformation, ~~especially the γ-α transformation of steel,~~ with respect to time ~~is detected~~ with temperature measuring devices that can be moved in the direction of conveyance of the metal and/or variably oriented.

5. (Currently Amended) Method in accordance with Claim 1, including comparing an actual value and a set value, and ~~wherein~~ if the [[a]] comparison of the actual value and the set value reveals a difference that exceeds a certain value, carrying out an online adaptation of the method model and/or the microstructure model ~~is carried out~~ as a function of the detected value that provides information about the microstructure.

6. (New) Method in accordance with claim 1, including detecting the microstructural grain size value with ultrasonic or x-ray measuring instruments.

7. (New) Method in accordance with claim 1, including detecting the microstructural transformation time or the microstructural transformation time interval by detecting linear expansion of the metallic lattice that is associated with the transformation using measuring instruments that contact the metal.

8. (New) Method in accordance with claim 7, wherein the measuring instruments are rolling force measuring devices or measuring rollers.

9. (New) Method in accordance with claim 1, including detecting the microstructural transformation temperature with at least one temperature detection unit, which is movable longitudinally with respect to the direction of metal conveyance and is positioned as a function of the site of the microstructrual transformation that is expected based on the microstructure model